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Digital Platforms in Agricultural Marketing: A Case Study of Accessibility, Scope and Constraints in Chikkaballapur District, Karnataka

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Abstract

This research study examined the accessibility, usage pattern, scope and constraints of digital platforms in agricultural marketing in Chikkaballapur district. Based on primary data from 120 farmers using a mixed-method approach, the study examines digital platforms such as e-NAM, Unified Market Platform (UMP), social media, Krishi Bandhu, and e-Samridhi. The findings revealed that UMP was the most widely used platform with 96.66% of farmers using it regularly, while social media was mainly used for information (73.34%). e-NAM (52.5%) and UMP (54.16%) are the most preferred platforms for marketing activities, whereas e-Samridhi shows low adoption, with 62.5% of farmers rarely using it. Major constraints were found to include inconsistent and unreliable internet (mean score 4.99), frequent power cuts (4.68), poor digital infrastructure (4.27), and lack of access to devices (4.12). Despite these challenges, several key benefits were reported by the respondent farmers such as access to real-time market prices (4.54), direct farmer-to-buyer transactions (4.45), and improved market access (4.31) were observed. Overall, it was concluded that agricultural digital platforms enhanced real time market prices and direct transactions without involvement of middlemen, although their full potential was limited by infrastructure and connectivity gaps.

Keywords: Agricultural Marketing, Digital Platforms, e-NAM, Social Media

Introduction

Digital marketing is the component of marketing that uses the internet and online-based technologies such as desktop computers, mobile phones, and other digital media and platforms to promote products and service. In the past, farmers depended on local markets and middlemen, which often gave them low prices and limited access to farmers. With the introduction of mobile apps, websites, and platforms like e-NAM and UMP (Unified Market Platform), farmers were able to check real-time prices, sell their produce online, and connect directly with buyers. These tools helped to reduce the costs, increase the farm income, and widen the market reach. Still, problems such as poor connectivity, lack of awareness, and Poor digital infrastructure, exist. Despite these, digital marketing offers great scopes to transform agriculture and strengthen farmers' livelihoods.

Agriculture supports nearly half of India's population, but selling farm produce has long been challenging, especially for small and marginal farmers. Dependence on middlemen, poor infrastructure, and limited market access often prevent farmers from getting fair prices (Kanchan and Singh, 2023) [4]. Digital tools like e-NAM, UMP (Unified Market Platform), and WhatsApp groups have been introduced to address these issues. They allow farmers to access real-time prices, connect directly with buyers, post produce online, and receive digital payments, improving transparency, efficiency, and profitability (Mala, 2023; Ningish *et al.*,

2024) [5, 7].

In Karnataka, where crops like fruits, vegetables, and flowers are widely grown, some farmers are adopting these tools effectively, while others still rely on traditional methods due to lack of digital skills, poor internet, or hesitation.

By conducting an exploration across the Chikkaballapur district, insights can be gained into how digital tools are being utilized by farmers to promote their agricultural products. The digital tools being used, the level of success achieved, the advantages experienced, and the challenges faced are examined. The extent of accessibility among farmers, their purposes of using these digital tools, and the types of constraints and scopes by use of these tools have also analyzed.

In recent years, digital marketing in agriculture has gained significant momentum in India. The Electronic National Agriculture Market (e-NAM) has been expanded to more than 1,260 APMC mandis across 22 states and 3 Union Territories, with over 1.7 crore farmers registered and trade transactions exceeded ₹2 lakh crore as of 2023. Rural smartphone penetration has crossed 75 per cent, supported by initiatives such as Digital India and PM-WANI, which are aimed at improving internet access and digital connectivity. Substantial public investment has been made to strengthen this ecosystem, with ₹14,903 crore allocated under the Digital India programme in 2023 and ₹750 crore earmarked for the expansion of e-NAM up to 2025.

In terms of digital agricultural transactions, states like Andhra Pradesh, Karnataka, and Maharashtra have emerged as top performers. The state of Karnataka contributed more than ₹12,000 crore in total e-NAM transactions in 2022-2023 alone, with mandis in Raichur and Hubli recording high amounts of digital transactions.

Despite the promotion of digital platforms for agricultural marketing in India, field-level evidence on farmers' usage, constraints, and perceived benefits remains limited, especially in semi-arid regions like Chikkaballapur district of Karnataka. The present study addresses this gap with the empirical evidence in this context.

Objectives

1. To analyze the accessibility and purpose of using digital platforms in agricultural marketing among the farmers.
2. To examine the scope and constraints of using digital platforms in agricultural marketing.

Materials and Methods

Selection of Study Area

Chikkaballapur district of Karnataka has an agriculture-based economy, with major crops like flowers, millets, vegetables, and grapes. With trade liberalization, both government and corporate sectors are promoting digital transformation for faster transactions. These factors make Chikkaballapur an ideal area to study the use and performance of digital platforms in agricultural marketing.

Research Design

A mixed-methods approach, both qualitative and quantitative techniques are used.

The quantitative aspect captures measurable data like the number of farmers using digital tools, accessibility and purposes of using the digital tools.

The qualitative analysis involves study of farmers faced the challenges for use of digital tools and scopes related to use of digital tools.

Sampling Procedure

A multi-stage simple sampling method was adopted to ensure fair representation of farmers using different marketing methods. In the first stage, two taluks—Chintamani and Sidlaghatta—were randomly selected from Chikkaballapur district, considering their agricultural importance and use of digital tools. In the second stage, two villages from each taluk were chosen randomly: Oolavadi and Kadiri (Chintamani), and Thippenahalli and Devanahalli (Sidlaghatta). In the final stage, they were 30 farmers per village. Thus, finally 120 respondent farmers were selected from these villages to collect the primary data with pre-tested and well-structured schedule during the year 2025-26. And the collected data was analyzed by using the analytical tools and techniques.

Percentage Analysis

Percentage analysis is used to describe the proportion of respondents or responses that fall into different categories. It helps to summarize categorical data effectively. It was used to describe the demographic and socio-economic profiles of the respondent farmers

Average (Mean) Analysis

The arithmetic mean, commonly known as the average, is a measure of central tendency used to summarize a set of numbers. It is calculated by adding up all the values in a data-set and then dividing the sum by the number of observations.

Sum of observation

Formula: Mean = $\frac{\text{Sum of observation}}{\text{Number of observations}}$

Total Weighted Score (TWS) and Mean Weighted Score (MWS)

Total Weighted Score (TWS) It is the total score a statement gets when the number of responses is multiplied by their weights on the 5-point Likert scale (Strongly Agree = 5 to Strongly Disagree = 1).

Mean Weighted Score (MWS) It is the average score, calculated by dividing the TWS by the total number of respondents.

This method helps to understand how strongly farmers agree or disagree with each statement about the constraints and scope of digital tools.

Results and Discussion

Demographic Profile of the Respondent Farmers

Table 1 tells that the average age of farmers ranged from 38.6 to 42.5 years, with small farmers being marginally older, and an overall mean age of 40.2 years. Male respondents predominated across landholding categories, particularly among medium farmers (75%), while female participation was higher among marginal farmers (62.8%), resulting in an overall distribution of 57.5 per cent males and 42.5 per cent females, consistent with the findings of Shreyas and Devaru (2023) [8]. Most of the respondents (85%) were married, which is consistent with the traditional rural agricultural structure. In contrast, marginal farmers had a comparatively greater percentage of unmarried respondents. The average years of schooling were highest among medium farmers (10.1), followed by marginal (9.5) and small farmers (9.2), with an overall mean of 9.6 years, indicating that farmers with larger landholdings tend to have slightly better educational attainment.

Table 1: Demographic Profile of the Respondent Farmers

Sl. No.	Particulars	Marginal (n=35)	Small (n=49)	Medium (n=36)	Overall (n=120)
1	Age year	38.6	42.5	39.7	40.2
2	Gender				
	Male (%)	13 (37.1)	29 (59.1)	27 (75)	69 (57.5)
	Female (%)	22 (62.8)	20 (40.8)	9 (25)	51 (42.5)
	Total	35	49	36	120
3	Marital status				
	Unmarried (%)	7 (20)	5 (10.2)	6 (16.67)	18 (15)
	Married (%)	28 (80)	44 (89.7)	30 (83.34)	102 (85)
	Total (%)	35	49	36	120
4	Education (year of schooling)	9.5	9.2	10.1	9.6

Digital Marketing Platforms

For Digital marketing the marketing channel has only one marketer (producer) and one consumer which can be expressed as:

Producer (seller) → consumer

e-Nam: A digital system operated by the government that connects APMC mandis throughout states is known as e-NAM (Electronic National Agriculture Market). It provides farmers more access to markets, which helps producers get higher prices.

UMP (Unified Marketing Platform): A Smart phone app or application that gives farmers access to real-time data on crop prices, market demand, weather, and advisory services. Launched in 2014 by Rashtriya e-Market Services Pvt. Ltd. (ReMS) is a PPP between GoK and NCDEX.

Krishi Bandhu: Crop advisories, market pricing, input dealers, weather predictions, and pest control advice are all available on this government app.

e-Samridhi: Utilized in some areas, this state-level digital program promotes online crop sales, soil health, and input services.

Social media: Social networking sites (like Facebook, WhatsApp, etc.) informal yet presently it is a successful method that allow farmers to exchange crop or purchasers directly.

Accessibility of Various Digital Platforms among Respondent Farmers

The Table 2 tells that the frequency of usage of various digital platforms for agricultural purposes by farmers is displayed.

UMP is the most used digital platform. here, 96.66% respondent farmers indicated that they utilized it always, and none say they "rarely" utilized it. despite this, e-Samridhi is found to be the rarely used digital platform, with 62.5% respondent farmers rarely using it. 0.83% of respondents using it always, 36.66% using it occasionally. And 61.67% of respondents engaged with e-NAM occasionally, while 37.5% of respondents used it always. Only 0.83% respondent farmers stated that they rarely used it. Similarly, social media was frequently used by 31.66% respondents. And 66.66% respondents utilised it occasionally, and only 1.66% use it rarely. Finally, Krishi Bandhu was engaged with 70.83% Of respondent farmers occasionally and 15% of respondents engaged rarely with Krishi Bandhu digital platform.

The results were in confirmation with the findings of Chaudhari and Anute (2020) ^[2] who identified that how farmers improve their market accessibility and profitability by utilizing the digital platforms like e-Nam, social media and mobile application.

Table 2: Accessibility of Various Digital Tools

Sl. no	Tools	Always		Occasionally		Rarely	
		Freq	%	Freq	%	Freq	%
1	e-NAM	45	37.5	74	61.67	1	0.83
2	UMP	116	96.66	4	3.34	0	0
3	e- Samridhi	1	0.83	44	36.66	75	62.5
4	Social media	38	31.66	80	66.66	2	1.66
5	Krishi Bandhu	17	14.16	85	70.83	18	15

Use of Digital Tools for Various Purposes

The Table 3 showed that how different digital tools had been used by farmers for three main purposes: obtaining information, marketing produce, and purchasing specific products. Among all tools, Social-media had been the most widely used for information, being used by 88 farmers (73.34%), although its use for marketing by 29 farmers (24.16%) and for product purchases by only 3 farmers (2.5%) had remained limited.

44 farmers (36.67%) utilized e-Samridhi for information and 62 (51.67%) for marketing, showing that it suited both functions well. Similarly, UMP had been used by 40 farmers (33.34%) for information and 65 (54.16%) for marketing, making it the most popular tool for marketing activities, while being used by just 15 farmers (12.5%) for purchase of specific product.

The government portal e-NAM was utilized less frequently for information (25 farmers, or 20.83%), And e-NAM was chosen by 63 farmers (52.5%) for marketing and 32 (26.67%) for purchasing specific products, indicating its commercial effectiveness. Krishi Bandhu has been utilized by 31 farmers (25.83%) for information, 54 (45%) for marketing, and 35 farmers (29.16%) for purchase of specific products, making it the most popular tools.

Table 3: Use of Digital Platforms for Various Purposes

Sl. No	Digital tools	For information		For marketing		Purchase of specific products	
		Freq	%	Freq	%	Freq	%
1	e-Nam	25	20.83	63	52.5	32	26.67
2	UMP	40	33.34	65	54.16	15	12.50
3	e- Samridhi	44	36.67	62	51.67	14	11.67
4	Social media	88	73.34	29	24.16	3	2.50
5	Krishi Bandhu	31	25.83	54	45	35	29.16

Constraints and Scope of Using Digital Platforms in Agricultural Marketing

Constraints of Using Digital Platforms in Agricultural Marketing

Based on a five-point Likert scale, farmers were asked to indicate how much they agreed with each problem investigated in the below table 4.

Primarily inconsistent and unreliable internet obtained the highest weighted mean score of 4.99, showed that significant agreement among respondents, the results clearly demonstrated that this is the most important issue. This implies that it is extremely difficult for farmers to use digital channels for marketing in the absence of reliable internet connectivity.

With an average score of 4.68, frequent power outages or cuts ranked as the second biggest constraint, impacted with the use of digital tool, particularly in rural locations where the power supply is frequently inconsistent.

Poor digital infrastructure, such as outdated systems and lack of technical support, was ranked third with a mean score of 4.27, indicating limited readiness for digital adoption.

Lack of access to necessary devices, such as laptops or cellphones, is another major problem; this got a mean score of 4.12. This indicates that some farmers lack the fundamental equipment required for the transition to digital

farming.

Finally, with a mean score of 3.92, the lack of high-speed internet in rural regions was also noted as a constraint.

The results highlight that the main barriers to using digital tools in agriculture marketing are related to internet connectivity, power supply, infrastructure quality, and access to devices.

The results agreed with the findings of Jena *et al.* (2023) ^[3], Kanchana and Singh (2023) ^[4], Vasumathi and Arun (2021) ^[9] who reported that the major constraints of using digital tools included inadequate access, internet connectivity, poor infra-structure, *etc.* which were the significant problems.

Table 4: Constraints of Using Digital Platforms in Agricultural Marketing.

Sl. No	Statements	TWS	Weighted Mean score	Rank
1	Inconsistent and unreliable internet.	599	4.99	I.
2	Frequent power outages/cuts that affect the digital tools.	562	4.68	II.
3	Poor digital infrastructure tools.	513	4.27	III.
4	Lack of access to necessary devices	495	4.12	IV.
5	Lack of high-speed internet in rural areas.	471	3.92	V.

Scope of Using Digital Platforms in Agricultural Marketing

The **Table 5** Indicated how farmer respondents ranked the different advantages of digital tools according to their Total Weighted Score (TWS) and Weighted Mean Score. The goal is to determine which advantages, in the context of digital agriculture marketing, people appreciate the most. The most important advantage was real-time market prices, which ranked first with a weighted mean score of 4.54 and a TWS of 545. This demonstrated how important it is for farmers to have current price and market information as it could assist them in making more informed selling decision. With a weighted mean score of 4.45 and a TWS of 534, direct farmer-to-buyer transactions come in second. This suggested that a strong desire to avoid middlemen, which might help farmers make more money and build direct trading relationships. Market access is ranked third, with a TWS of 518 and a weighted mean score of 4.31. This

suggested that broader access to markets both geographically and digitally was seen as a valuable benefit, though slightly less so than real-time market prices or direct sales. Secure digital payments have a weighted mean score of 4.27 and a TWS of 513, placed in the fourth place. Although still seen as significant, this showed that market access is given more weight than financial stability and smooth transactions. With the lowest TWS of 439 and a weighted mean score of 3.65, job creation comes in at number five. It seems that farmers place more value on direct market advantages than on indirect economic benefits like job creation.

The results were in conformation with the findings of Bhuva and Vyas (2020) ^[1], Mishra *et al.* (2020) ^[6], Kanchan and Singh (2023) ^[4] who reported that farmers got benefited from digital marketing from reduced reliance on middlemen, direct market access.

Table 5: Scope of Using Digital Platforms in Agricultural Marketing.

Sl. No	Statements	TWS	Weighted Mean score	Rank
1	Real time Market Prices	545	4.54	I.
2	Direct farmer to buyer transactions	534	4.45	II.
3	Market access	518	4.31	III.
4	Secure digital payments	513	4.27	IV.
5	Job creation	439	3.65	V.

Conclusion

The research study confirms that Unified Market Platform (UMP) was the most preferred and consistently used digital platform, with nearly 96.6% of respondent farmers reporting regular usage, indicating its strong acceptance in agricultural marketing. e-NAM and social media exhibit moderate adoption, primarily used on an occasional basis for marketing and information dissemination, respectively, while Krishi Bandhu was selectively used for purchasing specific product inputs. In contrast, e-Samridhi shows very low usage, reflecting limited awareness and acceptance among farmers. Overall, farmers adopted the digital tools based on specific functional needs such as information access, marketing, and daily agricultural requirements.

These findings indicate that connectivity and infrastructure-related issues constituted the major barriers to effective digital tool usage. The major constraints for application of digital mode of marketing were inconsistent and unreliable internet connectivity. Besides, power cut, infrastructure, digital devices, *etc.* were confirmed to be the other constraints.

Despite these constraints, farmers perceived strong scope in digital platforms, particularly for real-time market access, direct farmer-to-buyer transactions, and improved market reach, while secure digital payments also show promising potential. However, the role of digital tools in job creation is perceived as relatively limited.

Thus, the overall study, shows that the digital platforms are

becoming increasingly significant in agricultural marketing. UMP, e-NAM, Krishi Bandhu etc. Were the front liners digital media which were found to be preferred by the respondent farmers.

References

1. Bhuva KK, Vyas VH. A study on use of digital marketing platforms as a tool for rural marketing in India. *Int J Anal Exp Modal Anal*. 2020;12(1).
2. Chaudhari MG, Anute N. Digital marketing practices adopted by agricultural service companies in India. *Int J Res Publ Rev*. 2022.
3. Jena P, Chauhan AS, Tigga AS, Kumar S, Kumari M, Behera SK. Problems faced by farmers using digital tools in agriculture in Central Zone of India. *Asian J Agric Ext Econ Sociol*. 2023;41(10):311-316.
4. Kanchan, Singh S. The digital transformation of agri marketing: Managing customer experience. *Int J Agric Food Sci*. 2023;5(2):94-102.
5. Mala M. Digitalization of agricultural marketing in Karnataka: Opportunities and challenges. *Int J Manag Soc Sci Res Rev*. 2023;10(11):38-43.
6. Mishra CK. Digital marketing: Scope, opportunities and challenges. *Promot Mark Commun*. 2020;115:1-24.
7. Ningsih GM, Rasyid H, Ningsih N, Pujotomo D, Suseno GP. Agricultural marketing strategies in the digital era: Improving the competitiveness of local products. *J Soc Sci (JoSS)*. 2024;3(9):660-668.
8. Shreyas BD, Devaru DSDB. Impact of digital marketing among farmers in agribusiness with reference to Vivek Enterprises Holenarasipura Hassan. *Int J Multidiscip Res*. 2023;5(5):2582-2160.
9. Vasumathi P, Arun CJ. Young farmers' intention to use social media in marketing agro products: A conceptual framework. *Indian J Econ Bus*. 2021;20(2):359-370.